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WEEKLY EPIDEMIOLOGICAL REPORT

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Epidemiology of Leishmaniasis Part I

According to the available limited literature cutanious leishmaniasis seems to be an emerging disease in Sri Lanka. Recently suspected cases of cutanious leishmaniasis have been reported from the dermatology clinics in Anuradhapura and Matara districts. Currently Epidemiology Unit is in the process of investigation into those reported cases.
In this article we hopes to discuss the epidemiology of leishmaniasis.

Leishmaniasis remains a severe public health problem, with an estimated global prevalence of 12 million cases and a yearly incidence of 1.5–2 million cases (1–1.5 million for cutaneous leishmaniasis and 500 000 for the visceral form).

For many years, the public health impact of the leishmaniases has been grossly underestimated, mainly due to lack of awareness of its serious impact on health. Over the last 10 years, endemic regions have been spreading further and there has been a sharp increase in the number of recorded cases of the disease. As declaration is compulsory in only 32 of the 88 countries affected by leishmaniasis, a substantial number of cases are never recorded.

As with many diseases of poverty that cause high morbidity but low mortality, the true burden of leishmaniasis remains largely invisible, partly because those most affected live in remote areas, partly because the social stigma associated with the deformities and disfiguring scars caused by this disease keeps patients hidden. Leishmaniasis-related disabilities impose a great social burden, especially for women, and impair economic productivity.

Today, the leishmaniases undoubtedly have a wider geographical distribution than before and are now being reported in areas that were previously non-endemic. Environment and human tropical disease are linked together by human behaviour, both personal activities and societal organization. Increasing risk factors related to natural and man-made environmental changes are making leishmaniasis a growing public health concern for many countries around the world. One of the major risk factors is the worldwide phenomenon of urbanization, closely related to the sharp increase in migration. Socio-economic, demographic, cultural, religious, political and environmental factors have forced people increasingly to abandon their villages and move to the poor suburbs of cities. Migration patterns change over time as countries develop and urbanize: migration flows evolve from being primarily rural–rural to rural–urban and finally to urban–urban. Patterns of human settlement in urban areas have led, in developing countries, to a rapid growth of "megacities", where facilities for housing and sanitation are inadequate, thus creating opportunities for the transmission of communicable diseases such as leishmaniasis.

HOW IS LEISHMANIASIS SPREAD?

The leishmaniases are caused by 20 species pathogenic for humans belonging to the genus *Leishmania*, a protozoa transmitted by the bite of

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a tiny 2 to 3 millimetre-long insect vector, *the phlebotomine sandfly.* Of 500 known phlebotomine species, only some 30 of them have been positively identified as vectors of the disease. The phlebotomine sandfly, is found throughout *the world's inter-tropical and temperate regions.* Only the female sandfly transmits the protozoa. Sand flies become infected by biting an infected animal (for example, a rodent, dog or person). During a period of 4 to 25 days, the parasite continues its development inside the sandfly where it undergoes a major transformation. When the now infectious female sandfly feeds on a fresh source of blood, its painful sting inoculates its new victim with the parasite, and the transmission cycle is completed.

Sand flies make no noise when they fly or jump, so people may not realize they are being bitten. Sand flies are very small and may be hard to see; they are only about one-fourth the size of typical mosquitoes. Sand flies are most active from dusk to dawn. They are less active during the hottest times of the day. The female sandfly lays its eggs in the burrows of certain rodents, in the bark of old trees, in ruined buildings, in cracks in house walls, in animal shelters and in household rubbish, as it is in such environments that the larvae will find the organic matter, heat and humidity which are necessary for their development

Rarely, leishmaniasis is spread from a pregnant woman to her unborn baby. Leishmaniasis can also be spread by blood transfusions or contaminated needles.

VARIOUS FORMS OF LEISHMANIASIS

Leishmaniasis is a parasitic disease spread by the bite of infected sand flies. There are several different forms of leishmaniasis. The most common form is cutaneous leishmaniasis, which causes skin sores. Visceral leishmaniasis, which affects some of the body's internal organs, (most commonly the spleen, liver and bone marrow) is the most serious of the infections. Mucocutaneous forms affect mucous membranes.

HOW SOON MIGHT LEISHMANIASIS SYMPTOMS APPEAR AFTER INFECTION?

People with cutaneous leishmaniasis usually develop skin sores within a few weeks (sometimes as long as months) of when they are bitten. People with visceral leishmaniasis usually become sick within several months (rarely as long as years) of when they are bitten. Because it is a parasitic disease, if left untreated, reactivation can occur long after initial signs and symptoms resolve.

WHAT ARE THE SIGNS AND SYMPTOMS OF LEISHMANIASIS?

People with cutaneous leishmaniasis have one or more chronic skin lesions where infected sand flies have fed .normally produce skin ulcers on the exposed parts of the body such as the face, arms and legs. These lesions are generally unresponsive to antibiotics or topical steroids. The lesions start as a papule that often enlarges and then ulcerates. Some are surrounded by concentric silvery scales; some are raised pink plaques. Scabs may develop. The sores can change in size and appearance over time and some will heal spontaneously. The disease can produce a large number of lesions - sometimes up to 200 - causing serious disability and invariably leaving the patient permanently scarred, a stigma which can cause serious social prejudice. The sores can be painless or painful. Some people have swollen lymph nodes near the sores.

Visceral leishmaniasis - also known as kala-azar. People who have visceral leishmaniasis typically have chronic fever, weight loss, and sometimes an enlarged spleen or liver; usually the spleen is larger than the liver. Some patients have swollen glands. Patients usually have elevated liver function tests or low blood counts, including low red blood cell count, low white blood cell count, and/or low platelet count.

In mucocutaneous forms of leishmaniasis, lesions can lead to partial or total destruction of the mucous membranes of the nose, mouth and throat cavities and surrounding tissues.

Sources

1. LEISHMANIASIS Information for Clinicians. A Collaborative Effort of DHCC, AFIOH/RSR,DHSD, USACHPPM, & WRAMC.

2. Leishmaniasis fact sheet : The disease and its epidemiology. [http:// www.leishmaniasis\WHO The disease and its epidemiology.htm]

3. Urbanization: an increased risk factor for leishmani asis .*Weekly Epidemiological Record*, N° 77, 44, 1 November 2002 [http://www.who.int/wer]

4 Leishmaniasis fact sheet : Burden of the disease. [http:// www.leishmaniasis\WHO Burden the dis ease .htm]

This article was compiled by Dr Darshani Abeysekera - Epidemiology Unit Colombo

Part II of this article will be continued in the next issue.

Table 1: Vaccine-preventable Diseases & AFP

28th June - 4th July 2008 (27thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	00	00	00	00	02 BD=1 MO=1	00	02	01	53	49	+8.2%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	00	01 KD=1	00	00	00	00	00	00	00	01	00	61	41	+48.8%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	19	18	+5.5%
Whooping Cough	02 CO=1 KL=1	00	00	00	00	00	00	00	00	02	00	23	22	-4.5%
Tuberculosis	136	01	12	16	21	00	03	00	12	201	266	4543	5244	-13.6`%

Table 2: Newly Introduced Notifiable Diseases

28th June - 4th July 2008 (27thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2008	Number of cases during same week in 2007	Total number of cases to date in 2008	Total number of cases to date in 2007	Difference between the number of cases to date between 2008 & 2007
	W	C	S	N	E	NW	NC	U	Sab					
Chicken-pox	19	04	14	02	09	10	07	02	18	85	55	3025	1919	+57.6%
Meningitis	01 CO=2	01 KD=1	07 GL=2 HB=4 MT=1	00	00	03 KR=1 PU=2	01 PO=1	01 BD=1	00	14	18	786	167	+370.6%
Mumps	02	07	11	02	08	07	04	05	08	54	39	1388	799	+73.7%

Key to Table 1 & 2

Provinces: W=Western, C=Central, S=Southern, N=North, E= East, NC=North Central, NW=North Western, U=Uva, Sab=Sabaragamuwa.

DPDHS Divisions: CB=Colombo, GM=Gampaha, KL=Kalutara, KD=Kandy, ML=Matale, NE=Nuwara Eliya, GL=Galle, HB=Hambantota, MT=Matara, JF=Jaffna, KN=Killinochchi, MN=Mannar, VA=Vavuniya, MU=Mullaitivu, BT=Batticaloa, AM=Ampara, TR=Trincomalee, KM=Kalmunai, KR=Kurunegala, PU=Puttalam, AP=Anuradhapura, PO=Polonnaruwa, BD=Badulla, MO=Moneragala, RP=Ratnapura, KG=Kegalle.

Table 3: Laboratory Surveillance of Dengue Fever

28th June - 4th July 2008 (27thWeek)

Samples	Number tested		Number positive *		Serotypes									
					D_1		D_2		D_3		D_4		Negative	
	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH	GT	AH
Number for current week	02	06	00	00	00	00	00	00	00	00	00	00	00	00
Total number to date in 2008	98	100	07	19	00	00	04	08	01	06	00	00	02	00

Sources: Genetech Molecular Diagnostics & School of Gene Technology, Colombo [GT] and Genetic Laboratory Asiri Surgical Hospital [AH]

* Not all positives are subjected to serotyping.

NA= Not Available.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.

Special Surveillance: Acute Flaccid Paralysis.

National Control Program for Tuberculosis and Chest Diseases: Tuberculosis.

Table 4: Selected notifiable diseases reported by Medical Officers of Health

28th June - 4th July 2008 (27thWeek)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephal-itis		Enteric Fever		Food Poisoning		Leptos-pirosis		Typhus Fever		Viral Hepatitis		Human-Rabies		Re-turns Re-ceive
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	16	953	04	91	00	07	00	57	02	64	07	226	00	02	02	71	01	01	**77**
Gampaha	14	591	03	99	01	14	00	31	00	66	10	236	01	05	02	79	00	03	**93**
Kalutara	06	301	04	201	00	08	01	43	00	16	05	283	00	02	00	25	00	00	**92**
Kandy	08	139	07	147	00	05	02	36	01	40	12	266	03	60	01	87	00	01	**68**
Matale	00	65	04	136	00	02	01	33	00	04	11	559	00	01	01	21	00	00	**75**
Nuwara Eliya	00	15	07	144	00	02	10	188	00	110	02	34	00	34	01	83	00	01	**85**
Galle	01	66	05	106	00	11	00	11	00	43	05	212	00	10	00	06	00	03	**94**
Hambantota	03	57	01	53	01	04	00	06	00	07	02	68	01	56	00	05	00	00	**91**
Matara	03	145	01	114	00	05	01	23	00	02	05	213	06	121	00	08	00	01	**100**
Jaffna	00	52	00	79	00	01	01	208	00	08	00	00	00	142	01	25	00	00	**88**
Kilinochchi	00	00	00	14	00	00	00	00	00	00	00	02	00	00	00	01	00	00	**00**
Mannar	00	25	00	11	00	06	02	111	00	00	00	00	00	01	00	11	00	00	**50**
Vavuniya	00	10	00	35	00	02	01	04	00	13	00	05	00	01	00	04	00	00	**100**
Mullaitivu	00	00	00	02	00	00	00	08	00	12	00	00	00	01	00	06	00	00	**00**
Batticaloa	01	85	02	63	00	03	02	19	00	19	00	03	00	01	00	77	00	05	**82**
Ampara	02	22	19	168	00	00	00	05	00	00	00	16	00	00	00	05	00	00	**29**
Trincomalee	00	173	00	58	00	00	00	11	00	12	00	24	00	15	00	12	00	00	**70**
Kurunegala	05	231	04	147	00	11	00	35	00	13	06	161	00	16	03	36	00	04	**94**
Puttalam	03	258	01	48	00	08	04	127	00	21	05	25	00	32	00	25	00	03	**100**
Anuradhapur	00	109	00	50	02	08	00	08	00	05	03	217	00	10	00	10	00	02	**74**
Polonnaruwa	00	54	05	80	00	01	00	21	00	06	01	54	00	01	01	17	00	00	**86**
Badulla	02	52	09	263	00	04	03	78	00	13	01	31	02	72	08	73	00	01	**100**
Monaragala	00	41	16	244	00	02	00	28	00	110	01	83	00	66	02	23	00	00	**64**
Ratnapura	34	172	06	168	00	22	00	41	00	43	04	117	00	73	01	42	00	00	**94**
Kegalle	13	264	07	213	01	23	02	45	00	02	11	199	01	47	07	394	00	00	**100**
Kalmunai	00	29	03	176	00	02	00	09	02	12	00	00	00	02	00	19	00	00	**92**
SRI LANKA	**111**	**3909**	**108**	**2910**	**05**	**151**	**30**	**1186**	**05**	**641**	**91**	**3034**	**14**	**770**	**30**	**1165**	**01**	**25**	**82**

Source: Weekly Returns of Communicable Diseases (WRCD).

***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.

****Timely** refers to returns received on or before 12 July, 2008 Total number of reporting units =238. Number of reporting units data provided for the current week: 251

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